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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No. 

09/932,459

Applicant(s)

YI ET AL.

Examiner

Tri H. Phan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-55 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-55 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 09/863400.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>03/02/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment/Arguments

1. This Office Action is in response to the Preliminary Amendment filed on March 24th, 2004. Claims 1, 11 and 12 are amended and new claims 13-55 are added. Claims 1-55 are now pending in the application.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

3. Figures 1-6 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

4. Claim 11 is objected to because of the following informalities:

In claim 11, the word "a" in front of the term "previous PDU" (line 5) and in front of the term "last PDU" (line 5) should be changed to -- the -- for clarity. Also in claim 11, same objection for the word "a" in front of the term "length indicator" (line 6), in front of the term "PDU Length Indicator" (line 8) and in front of the term "previous PDU" (line 8) should be changed to -- the -- for clarity.

Appropriate corrections are required.

Double Patenting

5. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

6. Claims 1-12 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1-12 of copending Application No. 09/863,400. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 103

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7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-2 and 12- are rejected under 35 U.S.C. 103(a) as being unpatentable over **Abrol** (U.S.6,507,582) in view of **Chang et al.** (U.S.6,665,313).

- In regard to claims 1 and 12, **Abrol** discloses in Figs. 1-5 and in the respective portions of the specification about system and method for efficiently and reliably transmitting data using the enhanced radio link protocol ("*radio link control*"; For example see Abstract; col. 1, lines 7-11) retransmitting RLP frames ("*PDU mode*") through the wireless channel by eliminating the information component from the next PDU ("*omitting data length field*" or '*LEN*'; For example see Figs. 1-2; col. 8, lines 22-30), but fails to explicitly disclose about the method of "*checking whether the length indicator indicates the previous PDU ending at the end*" as claimed in claimed invention 12.

However, in order to determine the data length field may be omitted, if the length of data is indicated in other parts of the retransmit frame, it is obvious that the method of "*checking*" is provided. **Abrol** also fails to explicitly disclose about the information component ("*length of data*") that indicates the current PDU size corresponds to the total size of components of the PDU. However, such implementation is known in the art.

For example, **Chang** discloses about the device and method for transmitting/receiving information frame in the radio link protocol; wherein the

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information frame comprises a plurality of consecutive multiplex frames ('MuxPDU'), each includes a plurality of sub-multiplex frame with the services identifier, length indicator ("LF") indicating the length of the transmission data, and data block (*"information component indicates total size of components of the PDU"*; For example see Figs. 5-8; Abstract; col. 15, lines 27-31; col. 15, line 62 through col. 16, line 21).

Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to combine the invention as taught by **Chang** into the **Abrol's** data length field, with the motivation being to improve the effective data transmission for exchanging variable-length data in the radio environment as disclosed in **Chang**: col. 1, lines 20-22.

- Regarding claim 2, **Abrol** further discloses about the full-rate RLP frame (*"PDU"*) being placed into smaller non-full-rate RPL frames (*"SDU"*) with data length (*"LF"*) for retransmission (For example see Figs. 1-3; col. 6, lines 6-20; col. 7, line 62 through col. 7, line 12); and eliminating the information component from the next PDU (*'omitting data length field'* or *'LEN'*; For example see Figs. 1-2; col. 8, lines 22-30) as claimed in the claimed invention 6.

9. Claims 5-6 and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Abrol** (U.S.6,507,582) in view of **ETSI EN 301 349 V.7.5.0 (2000-07)** ["Digital cellular Telecommunications System (Phase 2+); General Packet Data Service, Mobile Station-Base Station System Interface; Radio link Control/Medium Access Control Protocol" GSM 04.60 version 7.5.0 Release 1998 (XP-002236190)].

- Regarding claims 5 and 6, **Abrol** discloses in Figs. 1-5 and in the respective portions of the specification about system and method for efficiently and reliably transmitting data using the enhanced radio link protocol ("*radio link control*"; For example see Abstract; col. 1, lines 7-11) retransmitting RLP frames ("*PDU*s") by being placed into smaller non-full-rate RPL frames ("*SDU*s"; wherein, the methods such as "*setting and comparing the PDU size*" with the total size of the RPL frames are obvious in placing the full-rate RPL frames into the smaller non-full-rate RPL frames) with data length ("*LI*") for retransmission through the wireless channel ('*omitting data length field*' or '*LEN*'; For example see Figs. 1-2; col. 8, lines 22-30), but fails to explicitly disclose about the method of "*determining and inputting the LI value for the last SDU if possible*". However, such implementation is known in the art.

For example, **ETSI EN 301 349 V.7.5.0 (2000-07)** discloses about the method for providing the use of the length indicator where the PDU does not end within the current RLC data block or where the PDU fits exactly into the RLC block so the length indicator can be omitted ("*determining and inputting the LI value for the last SDU if possible*"; For example see Figs. B.1-2 and Figs. B.5-6).

Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to implement the invention as taught by **ETSI EN 301 349 V.7.5.0 (2000-07)** into the **Abrol**'s RLP frames, with the motivation being to improve the reliably transmitting data and minimize the overhead inherent for the frames as disclosed in **Abrol**: col. 1, lines 7-11.

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- In regard to claim 9, **Abrol** discloses in Figs. 1-5 and in the respective portions of the specification about system and method for efficiently and reliably transmitting data using the enhanced radio link protocol ("*radio link control*"; For example see Abstract; col. 1, lines 7-11) retransmitting RLP frames ("*PDU mode*") through the wireless channel by placing the full-rate RLP frame ("*PDU*") into smaller non-full-rate RPL frames ("*SDU*") with header, sequence number ("*prescribed sequence of bit pattern*"; For example see Figs. 1-3; Table 1); data length ("*length indicator or LI*") and data for retransmission (For example see Figs. 1-3; col. 6, lines 6-20; col. 7, line 62 through col. 7, line 12); but fails to explicitly disclose about the data length when the previous PDU header "*did not contain complete length of the SDUs in the previous PDU*" or where the RPL frame does not contain or omitted the data length "*indicates the end of the SDU in the previous PDU if the previous PDU ends exactly with a last segment of the SDU*". However, such implementation is known in the art.

For example, **ETSI EN 301 349 V.7.5.0 (2000-07)** discloses about the extended use of the length indicator where the PDU does not end within the current RLC data block ("*when the previous PDU header did not contain complete length of the SDUs in the previous PDU*"; For example see Figs. B.1-2) and where the PDU fits exactly into the RLC block so the length indicator can be omitted ("*omitted the length indicator*"; For example see Figs. B.5-6).

Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to implement the invention as taught by **ETSI EN 301 349 V.7.5.0 (2000-07)** into the **Abrol**'s RLP frames, with the motivation being to

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improve the reliably transmitting data and minimize the overhead inherent for the frames as disclosed in **Abrol**: col. 1, lines 7-11.

- Regarding claim 10, **Abrol** discloses in Figs. 1-5 and in the respective portions of the specification about system and method for efficiently and reliably transmitting data using the enhanced radio link protocol (“*radio link control*”; For example see Abstract; col. 1, lines 7-11) retransmitting RLP frames (“*PDU mode*”) through the wireless channel by placing the full-rate RLP frame (“*PDU*”) into smaller non-full-rate RPL frames (“*SDU*”) with header, sequence number (“*prescribed sequence of bit pattern*”; For example see Figs. 1-3; Table 1); data length (“*length indicator or LI*”) and data for retransmission (For example see Figs. 1-3; col. 6, lines 6-20; col. 7, line 62 through col. 7, line 12; wherein the method such as “*forming the PDU from the plurality of SDUs*” is obvious at the receiving side of the wireless channel); but fails to explicitly disclose about the “*final segment of padding data length can have length of zero*” so the LI can be omitted. However, such implementation is known in the art.

For example, **ETSI EN 301 349 V.7.5.0 (2000-07)** discloses about the use of the length indicator where the final length indicator indicates for the final padding (For example see Fig. B.3) and where the PDU fits exactly into the RLC block so the length indicator can be omitted (“*omitted the length indicator*”; For example see Figs. Figs. B.1-2 and B.5-6).

Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to implement the invention as taught by **ETSI EN 301 349 V.7.5.0 (2000-07)** into the **Abrol**'s RLP frames, with the motivation being to

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improve the reliably transmitting data and minimize the overhead inherent for the frames as disclosed in **Abrol**: col. 1, lines 7-11.

10. Claims 13-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over **ETSI TS 125 322 v.3.1.2 (2000-01)** [“Universal Mobile Telecommunications System (UMTS); RLC Protocol Specification (3G TS 25.322 version 3.1.2 Release 1999 (XP-002168713)] (hereinafter the “**TS 125 322 v.3.1.2** reference”) in view of **ETSI EN 301 349 v.7.5.0 (2000-07)** [“Digital cellular Telecommunications System (Phase 2+); General Packet Data Service, Mobile Station-Base Station System Interface; Radio link Control/Medium Access Control Protocol” GSM 04.60 version 7.5.0 Release 1998 (XP-002236190)] (hereinafter the “**EN 301 349 v.7.5.0** reference”).

- In regard to claim 13, **TS 125 322 v.3.1.2** discloses in Figs. 1-5 and in the respective portions of the specification about the RLC construction model with the transmitting and receiving entities (“*communication devices*”) for transparent, unacknowledged and acknowledge mode service; wherein the transmitting Tr-entity (“*lower layer*”) receives SDUs from the higher layers through the Tr-SAP, UM-SAP, or AM-SAP (“*upper layer*”) for segmenting the SDUs (“*first/second corresponding number m/n of data of the upper layer*”) into appropriate size sequence RLC PDUs (“*converting a plurality of data into a plurality of data units being a prescribed size and subsequent data unit of the first unit in the communication device*”; For example see Figs. 4.1-4.4 page 9, section 4.2.1: Model of RCL through page 14, section 4.2.1.3: Acknowledge mode entity) with fields in the header such as Data/Control, Sequence Number, Polling bit, Length

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Indicators or 'LI' (*"first/second prescribed number x/y of first/second indicators"*), Extension bit, Header Extension Type, etc..., in octet-aligned (*"octet"*) (For example see Figs. 9.2-9.3; page 20; page 22, Section 9.2.2: Parameters through page 24, Section 9.2.2.10 Padding 'PAD') and wherein the next Length Indicator in the next PDU (*"second indicator of the second unit"*) has value LI = "0" or LI = "111 1111 1111 1011" depends on the end of last segment of the SDU that exactly ends of a PDU or one octet short (*"indicating the end of mth data of the upper layer is provided within the first unit of the lower layer"*) as disclosed in Section 9.2.2.8: Length Indicator 'LI', page 23. However, **TS 125 322 v.3.1.2** fails to explicitly disclose where there is *"no corresponding first indicator for the mth data within the first unit"*. However, such implementation is known in the art.

For example, **EN 301 349 v.7.5.0** discloses about the use of the Length Indicator where the LLC PDU boundary is extended into the next RLC data block 'N+1' (*"second unit"*); For example see section B.2: Example 2, Fig. B.2; wherein, it is obvious that N is the *"first unit"*) and where the Length Indicator can be omitted in the RCL data block N (*"first unit"*) but it is indicated the end of the LLC PDU 1 (*"indicating the end of the mth data of the upper layer"*) in the RCL data block N+1 (*"second unit"*) (For example see section B.7: Example 7, Fig. B.7).

Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to implement the invention as taught by **EN 301 349 v.7.5.0** into the **TS 125 322 v.3.1.2**'s RLP frames, with the motivation being to provide the extended use of the Length Indicator, where the LLC PDU boundary is extended into the next RLC data block.

- Regarding claims 14, 31 and 44, **TS 125 322 v.3.1.2** further discloses about the method of receiving the SDUs from the higher layer through the Tr-SAP, UM-SAP, or AM-SAP ("*service data units or SDUs*"; For example see page 11, Section 4.2.1.1: Transparent mode entities through page 14, Section 4.2.1.3: Acknowledge mode entity).

- In regarding claims 15, 32 and 45, the combination of **TS 125 322 v.3.1.2** and **EN 301 349 v.7.5.0** further discloses about the use of LI to indicate the last octet of each SDU ("*last octet of each SDU*"; For example see **TS 125 322 v.3.1.2**: page 23, Section 9.2.2.8 Length Indicator 'LI'; **EN 301 349 v.7.5.0**: Figs. B.1-B.3)

- Regarding claims 16, 33 and 46, the combination of **TS 125 322 v.3.1.2** and **EN 301 349 v.7.5.0** further discloses about the use of the LI ("*Length Indicator*") in the next RLC data block 'N+1' ("*second indicator*") to indicate the end of the LLC PDU 1 of the RCL data block N ("*end portion of the last SDU including within the first unit of the plurality of data units*") (For example see **EN 301 349 v.7.5.0**: section B.7: Example 7, Fig. B.7).

Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to implement the invention as taught by **EN 301 349 v.7.5.0** into the **TS 125 322 v.3.1.2**'s RLP frames, with the motivation being to provide the extended use of the Length Indicator, where the LLC PDU boundary is extended into the next RLC data block.

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- In regard to claims 17, 34 and 47, the combination of **TS 125 322 v.3.1.2** and **EN 301 349 v.7.5.0** further discloses about the PDUs (*“protocol data units or PDUs”*); For example see **TS 125 322 v.3.1.2**: page 11, section 4.2.1.1: Transparent mode entities through page 14, section 4.2.1.3: Acknowledge mode entity; **EN 301 349 v.7.5.0**: Figs. B.1-B.7).

- Regarding claims 18-19, 35-36 and 48-49, the combination of **TS 125 322 v.3.1.2** and **EN 301 349 v.7.5.0** further discloses about the radio link control layer (*“RLC layer”*); For example see **TS 125 322 v.3.1.2**: page 9, Section 4.2.1: Model of RCL) is operating in unacknowledged mode PDU or acknowledged mode PDU (*“UMD or AMD”*); For example see **TS 125 322 v.3.1.2**: page 11, Section 4.2.1.1: Transparent mode entities through page 14, Section 4.2.1.3: Acknowledge mode entity; Figs. 9.2-9.3; page 18, section 9.1 Protocol data units through page 20, section 9.2.1.3: AMD PDU).

- In regard to claims 20-21, 37-38 and 50-51, the combination of **TS 125 322 v.3.1.2** and **EN 301 349 v.7.5.0** further discloses about the Length Indicator which indicates the end of the SDU occurs in the PDU (*“length indicator indicating the end of the corresponding data within the first unit”*); For example see **TS 125 322 v.3.1.2**: pages 23-24, Section 9.2.2.8: Length Indicator ‘LI’) and has a value $LI = '0'$ where the previous RLC PDU is exactly filled with the last segment of a RLC SDU (*“second indicator has value of ‘0’”*); For example see **TS 125 322 v.3.1.2**: pages 23-24, section 9.2.2.8: Length Indicator ‘LI’).

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- Regarding claims 22-23, 39-40 and 52-53, the combination of **TS 125 322 v.3.1.2** and **EN 301 349 v.7.5.0** further discloses about the Length Indicator has a value $LI = '0'$ where the previous RLC PDU is exactly filled with the last segment of a RLC SDU (*“second indicator indicating the last segment of the m^{th} data exactly ends or fills at the end of the first unit”*); For example see **TS 125 322 v.3.1.2**: pages 23-24, section 9.2.2.8: Length Indicator ‘LI’) or about the use of the Length Indicator in the next RLC data block ‘N+1’ to indicate the end of the LLC PDU 1 of the RCL data block N (*“second indicator is the first length indicator within the second unit”*) (For example see **EN 301 349 v.7.5.0**: section B.7: Example 7, Fig. B.7).

Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to implement the invention as taught by **EN 301 349 v.7.5.0** into the **TS 125 322 v.3.1.2**'s RLP frames, with the motivation being to provide the extended use of the Length Indicator, where the LLC PDU boundary is extended into the next RLC data block.

- In regard to claim 24, the combination of **TS 125 322 v.3.1.2** and **EN 301 349 v.7.5.0** further discloses about the Length Indicator having size of one octet (For example see **TS 125 322 v.3.1.2**: pages 19-20, section 9.2.1.2 UMD PDU through section 9.2.1.3 AMD PDU; pages 23-24, section 9.2.2.8: Length Indicator ‘LI’; **EN 301 349 v.7.5.0**: Figs. B.1-7).

- Regarding claims 25, 29, 41 and 54, the combination of **TS 125 322 v.3.1.2** and **EN 301 349 v.7.5.0** further discloses about the padding method where the Length

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Indicator has value LI = “1111111” in the 7bit length or “111 1111 1111 1111” in the 15 bit length (For example see **TS 125 322 v.3.1.2**: page 24, section 9.2.2.8: Length Indicator ‘LI’ through section 9.2.2.10: Padding ‘PAD’).

- In regard to claims 26 and 55, the combination of **TS 125 322 v.3.1.2** and **EN 301 349 v.7.5.0** further discloses about the AMD PDU with *D/C indicator, sequence number, polling indicator ‘P’, header extension ‘HE’* in the header and the *data portion* (For example see **TS 125 322 v.3.1.2**: Fig. 9.3; page 20, section 9.2.1.3 AMD PDU; pages 22-24: section 9.2.2.1 through section 9.2.2.9).

- Regarding claims 27 and 28, the combination of **TS 125 322 v.3.1.2** and **EN 301 349 v.7.5.0** further discloses about the segmentation the SDUs (“*variable size*”) into appropriate fixed length (“*fixed size*”) RLC PDUs (For example see **TS 125 322 v.3.1.2**: Figs. 4.2-4.4; page 11, section 4.2.1.1: Transparent mode entities through page 14, section 4.2.1.3: Acknowledged mode entity) of the RCL peer entities (For example see **TS 125 322 v.3.1.2**: Fig. 4.1; page 9, section 4.2.1: Model of RLC; wherein, it is obvious that the RCL peer entity can be a “*base station or mobile station*”)

- In regard to claims 30 and 43, **TS 125 322 v.3.1.2** discloses in Figs. 1-5 and in the respective portions of the specification about the RLC construction model with the transmitting and receiving entities (“*mobile communication system*”) for transparent, unacknowledged and acknowledge mode service; wherein the transmitting Tr-entity (“*lower layer*”) receives SDUs from the higher layers through the Tr-SAP, UM-SAP, or

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AM-SAP (*“upper layer”*) for segmenting the SDUs (*“data unit of the upper layer”*) into appropriate size sequence RLC PDUs (*“including the data unit of the upper layer into the current data unit being a fixed size”*); For example see Figs. 4.1-4.4 page 9, section 4.2.1: Model of RCL through page 14, section 4.2.1.3: Acknowledge mode entity) with fields in the header such as Data/Control, Sequence Number, Polling bit, Length Indicators or ‘LI’ (*“first/second indicators”*), Extension bit, Header Extension Type, etc..., in octet-aligned (*“octet”*) (For example see Figs. 9.2-9.3; page 20; page 22, Section 9.2.2: Parameters through page 24, Section 9.2.2.10 Padding ‘PAD’) and wherein the next Length Indicator in the next PDU (*“second indicator of the following data unit of the lower layer”*) has value LI = “0” or LI = “111 1111 1111 1011” depends on the end of last segment of the SDU that exactly ends of a PDU or one octet short (*“indicating the end of the data unit of the upper layer is included within the current data unit of the lower layer”*) as disclosed in Section 9.2.2.8: Length Indicator ‘LI’, page 23. However, TS 125 322 v.3.1.2 fails to explicitly disclose about the first indicator *“is not included within the current data unit of the lower layer”*. However, such implementation is known in the art.

For example, EN 301 349 v.7.5.0 discloses about the use of the Length Indicator where the LLC PDU boundary is extended into the next RLC data block ‘N+1’ (*“following data unit”*); For example see section B.2: Example 2, Fig. B.2; wherein, it is obvious that N is the *“current data unit”*) and where the Length Indicator (*“first indicator”*) can be omitted in the RCL data block N (*“first unit”*) but the Length Indicator (*“second indicator”*) is indicated the end of the LLC PDU 1 (*“indicating the end of the data unit of the upper layer including within the current data unit of the lower layer”*) in

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the RCL data block N+1 ("*following data unit*") (For example see section B.7: Example 7, Fig. B.7).

Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to implement the invention as taught by **EN 301 349 v.7.5.0** into the **TS 125 322 v.3.1.2**'s RLP frames, with the motivation being to provide the extended use of the Length Indicator, where the LLC PDU boundary is extended into the next RLC data block.

Allowable Subject Matter

11. Claims 3-4 and 7-8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and overcome the rejection(s) under Double Patenting and Objection, set forth in this Office action.

12. Claim 11 would be allowable if rewritten or amended to overcome the objection(s) and rejection(s) under Double Patenting and Objection, set forth in this Office action.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Chang et al. (U.S.6,665,313), **Ahmadvand et al.** (U.S.6,542,490) and **Sipola** (U.S.2004/0114565) are all cited to show devices and methods for improving the

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exchange data in the radio link protocol of the mobile communication architectures, which are considered pertinent to the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tri H. Phan, whose telephone number is (571) 272-3074. The examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau T. Nguyen can be reached on (571) 272-3126.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office, whose telephone number is (703) 305-3900.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you

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have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tri H. Phan
January 24, 2005


BRIAN NGUYEN
PRIMARY EXAMINER